

# Research, well why not?

'If we knew what it was we were doing, it would not be called research, would it?'

[*Albert Einstein*]

I am a National Institute for Health Research (NIHR) Clinical Lecturer in Anaesthesia working at the University of Birmingham. I am going to share with you my story of how I got involved with research and why you, too, should consider getting involved.



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## My research journey

I first thought about doing research after passing my Final FRCA as a year one SpR (ST3 in new money). Like many anaesthetic trainees before me, I was faced with the difficult choice of developing a specialist interest 'post FRCA'. Looking back to life before revision, I realised that I have always enjoyed taking on an interesting topic and then designing and carrying out my own projects. A one-year research fellow post was advertised at the Academic Department of Anaesthesia, Critical Care, Pain and Resuscitation at Heart of England NHS Foundation Trust, and I decided to apply to gain some experience in carrying out clinical research. I joined a dedicated team of researchers who were actively involved in both basic science and translational research in anaesthesia and critical care. I met my supervisors who encouraged and guided me in finding my own research interests and within months of joining the department I decided to complete a higher research degree. I applied for two further years of Out

of Programme Research (OOPR) time from West Midlands Deanery and registered my degree with the University of Warwick.

My PhD was on strategies to improve quality of cardiopulmonary resuscitation (CPR). I was an Advanced Life Support instructor and taught regularly at local resuscitation courses. Despite advances in resuscitation science, survival rates from cardiac arrests remain low. High quality CPR is paramount to patient survival, but observational studies have revealed that quality of CPR is poor. I noticed that the quality of CPR varied greatly both in training and in real life, with many healthcare professionals merely 'going through the motions' without any real understanding of the science behind resuscitation. Together with my supervisors, I designed a series of studies which examined how real-time feedback devices, advanced airway devices and non-technical skills could improve quality of CPR. My research included observational data from out-of-hospital and in hospital cardiac arrests and laboratory work with simulation and manikins. I was awarded the first PhD fellowship from Resuscitation Council UK to support my research and completed my PhD successfully in 2011.

## Combining interest and work

I found it refreshing to spend dedicated time in pursuing a personal interest and to answer questions in an area in need of research. After fulfilling my clinical duties, I had time to read up and learn about previous and on-going research in resuscitation. For the first time in my clinical career, I had time to formulate ideas and discuss these

with other researchers. Through my research, I was fortunate to be invited as an expert reviewer for the International Liaison Committee on Resuscitation Science (ILCOR), part of the American Heart Association taskforce working towards updating the 2010 resuscitation guidelines. Together with other international experts, my findings were presented to other ILCOR members in Dallas, USA, and included into the new resuscitation guidelines. My systematic reviews were published as a book chapter and a review article. This was followed by presentations at other national and international meetings including competitions such as the Young Investigator Award of the European Resuscitation Council and the Gold Medal at the Intensive Care Society.

## Standing on shoulders of giants

My research has given me opportunities to travel to national and international conferences to present my findings. Having the opportunity to meet and network with internationally renowned experts was inspiring. I have met many experts who were more than willing to share their research and give advice on how to improve my research projects. It is exciting to know that there are so many clinicians and non-clinicians working tirelessly to improve patient outcome and that my own research, in some way, will contribute to the growing research collaborative. One such moment was meeting Dr Knickerbocker, one of the original inventors of external chest compressions, and hearing how chest compressions were discovered accidentally so many years ago.<sup>12</sup>

## Personal development

Taking time to do research has hugely benefited my own personal development. Skills that you will acquire include: formulating sound research questions and designing a satisfactory study design; gaining ethical and institutional approval for your proposed study; sharing your ideas and getting others on board to help with your study. There are many courses and workshops available, such as critical appraisal and literature review, essential statistics and epidemiology, and the use of databases and software packages, to add to the list. You will also develop superior communication skills in explaining your research to patients and layperson in order to gain their informed consent.

To build on my experience, I am also an editorial member of *Resuscitation* and the *Journal of Medical Case Reports* and carry out regular peer reviews of submitted manuscripts. I continue to contribute towards education in resuscitation and am a subcommittee member of the Immediate Life Support course of the Resuscitation Council. I have also gained experience in organising and chairing national research meetings and conferences.

In becoming the first trainee in West Midlands Deanery who wanted to complete a PhD, I had to become proactive in working with my hospital trust and managing my own clinical training. Patient safety is paramount. Even with the enormous support from my programme director and other consultants, it was crucial that I remain a competent anaesthetic trainee. Despite having to find my own way, I take heart in knowing that my example will make it easier for other trainees to follow.

I have been extremely lucky to have got to know some great people through my research and formed some firm friendships. They may not be directly involved in research but their dedication to their work is a constant source of motivation. Without their help and encouragement, my research would not have been possible. Great research

can only be achieved by working with others including, to name a few, patient representatives, a multidisciplinary team of healthcare professionals, statisticians, health economists.

## The world of academic anaesthesia needs you

Recognising the need to develop academic anaesthesia, the four main partner organisations in anaesthesia, RCoA, AAGBI, *BJA* and *Anaesthesia*, joined forces to form the National Institute of Academic Anaesthesia (NIAA) in 2008.<sup>3</sup> NIAA carried out a research priority setting exercise in order to highlight the need and importance of mainstream clinical anaesthesia research.<sup>4</sup> Anaesthetists form the biggest acute specialty with 10,000 of us coming into contact with patients every year undergoing up to 10 million surgical procedures. Our potential contribution to research in improving patient care and outcomes across all anaesthetic specialties and critical care cannot be underestimated. It is with regret that recent data revealed a decline in UK based publications<sup>5</sup> and only 104 identified anaesthetic researchers in the UK.<sup>6</sup>

## Improving patient care

All research projects, whether they are basic science or clinical studies, and irrespective of their scale, will help to build the substantial knowledge base needed to change clinical practice. Getting involved in the research process will mean that you can play a part in contributing towards improving patient care. Sharing your research either by publications or presentation will mean

that not only will your own knowledge improve but you can influence and inform others. The National Institute for Health Research (NIHR) is funded through the Department of Health to improve the health and wealth of the nation through research. Its aim is to support and conduct high quality clinical research to form part of the commitments of clinicians working in the NHS. Research is very much needed to continue to develop our core knowledge and establish the best evidence-based care for our patients.

## Opportunities

There are many opportunities to get involved in research, but you will need to do some background work. Integrated Academic Training Pathways have now been set up in the UK by the National Institute Health Research and trainees can join the programme as Academic Clinical Fellow or Clinical Lecturer (Figure 1). These posts provide time-tabled periods during anaesthetic training to allow for research training, completion of higher degree and advanced training in becoming an independent researcher.<sup>7</sup> There are also stand-alone research fellow posts in anaesthesia, critical care and pain medicine throughout the UK. It is worth asking your programme director who will know when and where these posts are advertised.

Keep an eye and ear out for opportunities around the workplace. Research projects may already be taking place and most investigators are more than happy to have help from trainees, this can include patient screening, analysing data or writing up results.

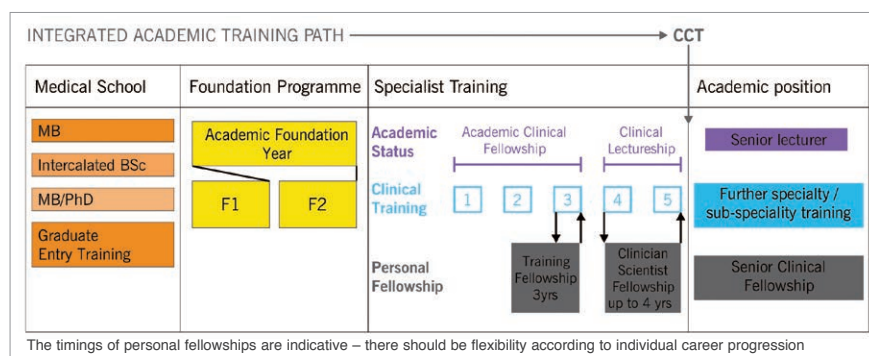


Figure 1 Integrated Academic Training Pathways

Many organisations are working hard to promote anaesthetic research activity such as NIAA Academic Trainee Days, NIAA Health Service Research Centre Peri-operative Research Forum, Academy of Medical Sciences and Anaesthetic Research Society. These meetings provide a platform for anaesthetists to present their research and networking opportunities.

## Some hints and personal experience

### Papers and publications

Whilst having your name on a publication is both curriculum vitae building and satisfying, it should not be the only goal in doing research. This is a common theme when I spoke to other trainees. We are all keen to get evidence of our hard work and publications are essential in the dissemination of results. It should be stressed that a quality paper in a high-impact, peer-reviewed journal is more important than the quantity of publications.

### Collaborate and share ideas

Very few research areas are completely novel and your research interests may overlap with others. The success of research often depends on collaboration. Presenting your research ideas to a wide audience will maximise the impact. It is good to share your research with others, no matter how small a project. If you have made the effort of all the hard work, it is worth presenting your results in national and international meetings. Look for both oral and poster presentation opportunities.

### Think about your environment

Your environment includes your supervisors, other research fellows and nurses who are going to be your support network. Research is about teamwork: make sure you utilise your team effectively. Environment also includes the academic department or university in which you will be working. You will need good access to journals and the internet. Make friends with your librarian. Most important of all: environment is your personal circumstances. Be realistic about the



Figure 2 The Island of Research – reproduced with permission from Dr E Harburg

amount of time and money you will need: it is always more than you think. University fees for a research degree will cost in the region of £3,000–£3,500 a year (MSc one year, MD two years, PhD three years). Taking time out of rotation to do research may also limit the available time that can be spent on other Out of Programme Experience (OOPE) and it is worth discussing with your programme director if applicable.

### Remember you are never alone

When you are in charge of your own project, it can be a lonely and frightening experience especially when things are not going according to plan (Figure 2: The Island of Research).<sup>8</sup> There is a strong culture of mentorship within the research environment and I strongly encourage finding a mentor whom you can trust to offer you advice and guidance.

### One last word...

Is that research is not for everyone. I have enjoyed my research experience immensely and will not hesitate to recommend it to those who want to find out more about research training. But if you are interested or intrigued in answering those burning questions, instead of thinking 'why do research?', you should be asking yourself 'why not research?'

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